An Evaluation of Pause Breathe Smile in Children with Moderate Anxiety

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Abstract

Anxiety is a common issue in children and there is a need for evidence-based treatments. High levels of anxiety can profoundly hinder a child's development and lead to impaired social skills, lower self-esteem and poorer academic achievement. The current study was the first to evaluate the effectiveness of Pause Breathe Smile – a mindfulness-based programme – for reducing anxiety symptoms and improving familial relationships in a sample of children with moderate anxiety. Pause Breathe Smile consists of eight, one-hour sessions that aim to teach children how to develop self-awareness, regulate emotions, and interact positively with others. Originally designed as a school-based intervention, the programme was adapted into a group therapy that children attended with a parent. Participants were eleven self-referred parent-child dyads. Psychological questionnaires and semi-structured interviews were used to evaluate the Pause Breathe Smile programme. Paired t-tests, modified Brinley plots with reliable changes indices, and thematic analysis were used to analyse data. Quantitative results showed children generally experienced a reduction of anxiety symptoms and improvement in emotional literacy. Evidence of enhanced familial relationships was found; children generally perceived their parent as becoming calmer and more emotionally responsive. Thematic analysis of interview data indicated children and parents worked synergistically to practise skills and benefit from the programme, which demonstrated the value of parental involvement. Both parents and children reported improved sleep, focus, emotional regulation and relational skills as benefits of the programme. Overall, the study found Pause Breathe Smile to be an effective treatment for children identified as moderately anxious, and a means of strengthening parent-child relationships.

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Introduction

Children in 2021 experience high levels of stress, resulting in an increasing incidence of emotional and behavioural problems (Bernay et al., 2016; Ministry of Health, 2018; de Miranda et al., 2020; Liberty et al., 2016). Anxiety disorders are the most common psychological issue in children, with nearly one in five meeting criteria by age 19 in New Zealand (Mental Health Commission, 2011; Piacentini & Roblek, 2002). Childhood anxiety can compromise children's ability to flourish at school and in life (Bernay et al., 2016), with impaired social skills and resilience, reduced social interactions, lower self-esteem and poorer academic achievement some of the most notable adverse effects (Christensen & Neil, 2009). Childhood anxiety is associated with increased absenteeism from school and poorer grades, leading to fewer career choices (Christensen & Neil, 2009). Anxiety places the individual at higher risk of mental health problems, substance abuse, and suicidal thoughts and behaviours in adulthood (Britton et al., 2014; Borquist-Conion et al., 2017).

There is a clear need for strategies that reduce the prevalence and severity of childhood anxiety symptoms. This need is particularly relevant in Christchurch, New Zealand. The 2011 Canterbury earthquake sequence has had sustained effects on child development and caused a dramatic increase in the number of children experiencing anxiety and stress-related issues (Liberty et al., 2016). The 2019 Christchurch mosque shootings, which saw Christchurch schools go into lockdown, are expected to exacerbate this problem. Furthermore, the current COVID-19 pandemic has resulted in drastic disruption to children's routines and is anticipated to have detrimental effects on child wellbeing and development (de Miranda et al., 2020). Alarmingly, youth with anxiety disorders often go unnoticed and untreated (Herzig-Anderson et al., 2012; Piacentini et al., 2002). Data identifying the unmet need of psychological treatment are lacking in New Zealand, but international data from comparable countries suggest it exists at a considerable degree (Paterson et al., 2018). It is

estimated only 25% to 34% of children and adolescents with a diagnosable psychological disorder receive treatment in Australia (Christensen & Neil, 2009). Strategies adopted to treat childhood anxiety in New Zealand should aim to address large numbers of highly anxious youth who are currently unidentified and untreated.

Schools are an excellent conduit for providing mental health treatment to many children at once, including those with clinical or subclinical symptoms who do not receive professional help. School-based, group treatments have been shown to substantially enhance wellbeing and reduce the severity of anxious and depressive symptoms in youth (Bernstein et al. 2008; Christensen & Neil, 2009). School-based treatment has many benefits relative to treatment in traditional settings (e.g. community clinics), such as reducing the stigma of receiving help, avoiding long waiting lists and reducing costs (Herzig-Anderson et al., 2012). In recent decades, a range of school-based programmes that teach children how to manage stress and difficult emotions have emerged with positive results (Bernay et al., 2016).

A meta-analysis by Christensen & Neil (2009) examined twenty-seven trials of school-based interventions for anxiety and concluded that most universal, selective and indicated programmes effectively lessen the symptoms of anxiety in children and adolescents. Most were cognitive behavioural therapy (CBT) based (78% of sample), with effect sizes ranging from 0.11 to 1.37. Universal programmes are presented to all pupils, regardless of symptom severity, and aim to bolster general wellbeing. Selective programmes aim to help those who are at heightened risk of developing a disorder, such as after experiencing a stressful event. Indicated programmes target students with mild or emergent symptoms of a disorder. Generally, indicated and selective programmes attain larger effect sizes than universal approaches (Reivich et al., 2005); this is theorised to be because there is more room for improvement in individuals who are exhibiting symptoms of a disorder, relative to those with low levels of distress (Reivich et al., 2005). Evidence that programmes

of this nature can improve emotional wellbeing in those with and without symptoms of a mental health problem highlights their suitability to the diverse populations of schools.

Bernstein et al. (2008) found that a nine-week, school-based CBT intervention decreased anxiety symptoms up to 12 months post-treatment in anxious children, relative to waitlisted controls. Prior to treatment, 75% of participants met Diagnostic and Statistical Manual of Mental Disorders Edition 5 (American Psychiatric Association, 2013) criteria for separation anxiety disorder, generalised anxiety disorder, and/or social phobia. The remaining 25% had subclinical symptoms. Parent-reported measures on the Multidimensional Anxiety Scale for Children (MASC) and Screen for Child Anxiety-Related Emotional Disorders (SCARED) showed significant improvements in children's anxiety symptoms at a six-month follow up. Bernstein et al.'s (2008) study provides evidence that long-term improvements can be observed in children with moderate to severe anxiety problems after a school-based, CBT intervention.

A review of school-based anxiety treatments for children and adolescents in North America by Herzig-Anderson et al. (2012) reported on the effectiveness of five different programmes. Each ran for 8 to 12 weeks, and were varied in content; all covered psychoeducation and cognitive restructuring, with some uniquely targeting social skills, traumatic memories, and relaxation techniques. The authors highlighted the advantage of school-based interventions in reducing the stigma of mental health care and increasing the number of students receiving necessary help. Overall, school-based treatments appear to be an effective means of treating varying degrees of anxiety in children, while bypassing some of the obstacles to traditional treatment (Herzig-Anderson et al., 2012). While many of the programmes reviewed have used the well-researched CBT approach, mindfulness-based interventions have been emerging as an anxiety treatment since the 1980s (Borquist-Conion et al., 2017).

Mindfulness is the "awareness that comes from paying attention to the present moment with an attitude of nonjudgement" (Bernay et al., 2016, p. 91). The practice involves an inward investigation of one's own mind, allowing the individual to become aware of emotions and ritualised reactions (Kabat-Zinn, 2005). Mindfulness can have major benefits, including reduced stress and anxiety (Ludwig et al., 2008; Siegel, 2010; Rix & Bernay, 2014), improved sleep quality (Ludwig & Kabat-Zinn, 2008), reduced depressive symptoms, improved wellbeing and optimism, and increased empathy and pro-social behaviour (Schonert-Reichl et al., 2015). Mindfulness is theorised to facilitate such changes by reducing emotional reactivity, which gradually alters thought patterns and improves self-management (Baer, 2003). Most research has examined adults, with relatively limited research on the efficacy of mindfulness interventions for child and adolescent mental health problems (Bernay et al., 2016). Nonetheless, mindfulness-based interventions are a promising avenue for this objective. A meta-analysis of mindfulness-based interventions for youth with anxiety disorders found that they can effectively reduce anxiety symptoms (Borquist-Conion et al., 2017). Collectively, the studies included 188 youth between the ages of five and eighteen, with a significant moderate effect size found overall. This suggests that mindfulness approaches can be well-received by and effective for youth populations with heightened anxiety.

Kallapiran et al. (2015) examined the outcomes of 15 randomised controlled trials of mindfulness-based interventions that aimed to improve mental health symptoms in children and adolescents. Most studies found the interventions successfully reduced stress, anxiety and depressive symptoms, and improved quality of life in both clinical and nonclinical samples. The authors are careful to note, however, that mindfulness-based interventions are a heterogeneous group; different programmes emphasise different philosophical and theoretical constructs of mindfulness, and may incorporate elements of CBT and other therapies. They

assert that adding elements of other therapies to programmes weakens the claim that increased mindfulness is the mechanism behind the improvements to wellbeing. This is especially true considering only five of the studies in their analysis explicitly measured mindfulness changes pre- and post-treatment. However, one study did find that improvements in mindfulness scores correlated with improvements in anxiety scores (Sibinga et al., 2012). Whilst it is hard to gauge how much mindfulness itself contributed to participants' improved wellbeing for those in this meta-analysis, it was a consistent element in all the interventions. Overall, the programmes examined were effective in reducing mental health problems in youth. Kallapiran et al. (2015) have advocated further research on mindfulness therapies for children and adolescents to establish the mechanisms by which they improve wellbeing.

Conversely, two recent meta-analyses of mindfulness-based interventions as treatment for youth with anxiety found they produced no benefit (Ruiz-Iniguez et al., 2019; Odgers et al., 2020). Odgers et al. (2020) examined 20 randomised controlled trials of mindfulness interventions for anxiety reduction in youth aged 18 or younger, and concluded they appear to be ineffective for reducing anxiety. However, the study suggested individuals with clinical levels of anxiety may benefit from mindfulness-based interventions, but those in the nonclinical range do not. Overall, research on the effectiveness of mindfulness-based interventions for treating youth with anxiety has produced conflicting results.

School-based mindfulness programmes are a popular phenomenon and an emergent area of research (Zenner et al., 2016). These programmes often target general school populations and aim to enhance resilience and wellbeing, rather than treat those with clinical or subclinical symptoms of a mental health disorder. A meta-analysis of 24 school-based mindfulness-based interventions by Zenner et al. (2014) found significant improvements in resilience, emotional problems and stress levels following treatment. A randomised controlled pilot study by Mendelson et al. (2010) found that children in the treatment group

showed improved responses to stress, less rumination, fewer intrusive thoughts, and reduced emotional arousal. In a controlled study by Schonert-Reichel et al. (2010), teachers reported significant improvements in the social and emotional competence of students, and students reported higher emotional wellbeing after mindfulness lessons were integrated into classroom practices three times a day. Another study of two primary schools in Melbourne reported fewer symptoms of anxiety and depression in students after participating in a 10-week mindfulness intervention (Joyce et al., 2010). Despite encouraging results, more research about the effectiveness of school-based mindfulness-based interventions is needed.

When conceptualising school-based mental health programmes, it is important to consider cultural suitability. Most research in the field has come from North America and Europe; school-based, mindfulness interventions in New Zealand are relatively scarce (Bernay et al., 2016). However, Pause Breathe Smile (PBS) is one such programme. It has been tailored to the cultural needs of New Zealand schools, with *Te Whare Tapa Whā* — a Māori model of hauora (holistic wellbeing) — serving as a cornerstone in the lessons. PBS was founded in 2012 and currently operates in over 300 schools across the country (Mindfulness Education Group, 2020). The programme aims to improve mental health in New Zealand through an evidence-based mindfulness intervention. It is a universal programme that aims to bolster wellbeing and calmness in children. The programme consists of a one hour session per week, over eight weeks. PBS is designed to reach children during pre-adolescence – a crucial stage of development where a strong foundation of wellbeing can set the stage for positive mental health in adulthood (Bernay et al., 2016).

Studies conducted on the effectiveness of PBS have found significant improvements in emotion and general wellbeing. A pilot study of PBS was conducted by Rix and Bernay (2014) with 126 students ranging from six to eleven years. Classroom teachers completed fortnightly journals as a qualitative measure of effectiveness. Overall, teachers reported

students being calmer and more centred, better able to focus and pay attention, with improved relational problem solving skills after the intervention.

Bernay et al. (2016) studied the effects of the PBS programme with 124 students, aged nine to twelve years. They found a significant increase in wellbeing post-treatment, as measured by the Stirling Children's Wellbeing Scale (SCWBS). However, wellbeing levels had returned to pre-treatment levels at three month follow-up. The authors found no significant increase in mindfulness at post-treatment from baseline, as measured by the Mindful Attention Awareness Scale modified for Children (MAAS-C); however, there was a significant increase from pre-treatment levels to levels at three month follow-up. The authors postulate the delay to effectiveness may be because it takes time for mindfulness practice to permeate daily behaviour. Bernay et al. (2016) also conducted interviews with some students and obtained reports of improved calmness, mental clarity, emotional regulation, and enhanced empathy and relationships.

Devcich et al. (2017) conducted a similar study to Bernay et al. (2016), but also included a control group that recieved eight emotional literacy classes instead of the PBS programme. The SCWBS and MAAS-C were used to measure the effectiveness of the programme. The control and treatment groups had significant increases in wellbeing from pre- to post-treatment, but the PBS treatment groups showed a significantly larger increase. At 12 week follow-up, the SCWBS scores had reduced from the immediate post-treatment assessment, but were still significantly higher than scores pre-treatment. Mindfulness scores had increased significantly at the end of the eight weeks for the PBS group only, and increased mindfulness was sustained at 12 week follow-up. Students who participated in PBS also indicated enjoying the programme, with a mean score of 5.76 (SD = 1.23) on a 7-point Likert-type scale (rated from 1 [I didn't like the classes at all] to 7 [I liked the classes a lot]).

A report by the Mindfulness Education Group (2019) examined teacher observation journals to assess the effectiveness of PBS in a sample of Waikato schools. Core themes that emerged from analysis were increased calm, improved emotional regulation and emotional literacy, and enhanced focus and attention in children. Students valued the mindfulness skills they learnt; they reported using the skills outside of school and sharing them with family. Increased displays of kindness and empathy from students was also a noted benefit of PBS. Teachers themselves reported experiencing an increasing sense of calm through their engagement with the programme, indicating the benefits of PBS extend to adults.

Case studies of three schools that had implemented PBS revealed a range of benefits for both students and teachers (Hynds et al., 2020). Hynds et al. (2020) analysed interview data from teacher and student interviews across the three schools. The study showed the use of PBS strategies helped children improve concentration and their ability to calm themselves in stressful situations. Teachers reported PBS helped themselves manage stress and improved their own sleep quality. Teachers reported improved relationships amongst students and enhanced connectedness in the classroom. Children became better able to describe their emotions and understand the feelings of their peers, which facilitated positive social interactions. The three schools included in Hynds et al.'s (2020) study included diverse cultures, indicating PBS is appropriate for both Māori and non-Māori. Overall, the study concluded PBS contributes to general wellbeing in the classroom, and can have "profound and dramatic effects for some children" (Hynds et al. (2020), pg. 3).

Clinical psychologist, Nigel Latta, is familiar with PBS and stated it could make a considerable improvement to youth mental health in Aotearoa New Zealand (Latta, 2018). This is a hopeful sentiment, yet evidence is lacking that PBS can improve outcomes for some of the most at-risk children – those with clinical or subclinical anxiety symptoms. Because PBS is a universal programme, research on its effectiveness has examined non-clinical school

samples and it is not known how children with higher levels of anxiety will respond. The important related question is whether PBS can reduce anxiety symptoms in children with moderate levels of anxiety. The current study aimed to answer this question. It was hypothesised that PBS would be an effective treatment for children identified as moderately anxious. Should the study support this hypothesis, it would endorse the use of PBS as an indicated treatment for this population, thus expanding its utility beyond a school-based programme to enhance wellbeing. A second aim of the study was to measure whether changes occur in the quality of familial relationships in participants attending PBS. Parents are usually not involved in the programme because PBS is mostly implemented through schools. As parents attended PBS with their child in the current study, there was a unique opportunity to study changes in the relationship between the child and parent after participating in PBS. It was hypothesised that there would be an improvement in the quality of relationship between the parent and child, due to the programme's emphasis on learning as a family team and encouragement to increase quality time together.

Method

Participants

Participants were recruited between July 2019 and February 2020, from families who participated in the Pause Breathe Smile (PBS) programme at the University of Canterbury's Psychology Centre. The programme was advertised through noticeboards at the University of Canterbury, family physician clinics, schools, and child mental health services, as a course to help children manage stress and anxiety. Those who attended the programme during the recruitment period were invited to participate in the study; there were no exclusion criteria. A total of eleven families were recruited; nine were parent-child dyads, and two parents each attended with two children. A total of thirteen children and eleven parents participated in the study. Among the child participants, the ages ranged from seven to eleven years (M = 9, SD = 1.12) and 54% were female. Of the parents, 91% were female. The study was approved by the University of Canterbury Educational Research Human Ethics Committee (see Appendix A).

Treatment

Pause Breathe Smile was developed in New Zealand, as a school-based mindfulness programme, by the Mindfulness Education Group. The Mindfulness Education website (Mindfulness Education Group, 2020) explains the general themes, aims, and practices of the programme as follows. Pause Breathe Smile centres around core mindfulness practices, including mindful breathing, emotional literacy, mindful eating, gratitude, mindful movements, *Te Whare Tapa Whā*, kindness, and resilience. Across eight, one-hour sessions, children engage in practices aimed to foster interoceptive awareness, strengthen attention and develop a non-judgemental curiosity about themselves and their surroundings. Emotion regulation strategies, including identifying emotions, are introduced. Towards the end of the programme, there is a focus on relationships, connection, and kindness. Children learn about

the physical and emotional benefits of practising kind acts, and are encouraged to consider their connection to the world around them, such as the mutually beneficial exchange of gases between humans and plants.

The original format of PBS has been somewhat adapted to become a targeted therapy for children with anxiety at The University of Canterbury's Psychology Centre. The programme is taught by a clinical psychologist, who is a trained PBS facilitator, with a clinical psychology student as a co-facilitator. Children attend the programme with a parent. As a result, there is a focus on the child and parent becoming a team, learning together, and helping each other practise skills at home. Means of strengthening the child-parent relationship, such as mindful cuddling practices and scheduling pleasant activities together, are included in the course. Children and parents are encouraged to engage in listening to mindfulness audio recordings together each night, from the Mindfulness Education website (Mindfulness Education Group, 2020). Audio recordings vary in length, but are no more than ten minutes long, and are designed to reinforce practices taught in the course. Each participant receives a take-home journal with weekly exercises to complete, which revise the course content.

Measures

Screen for Child Anxiety Related Emotional Disorders - Child and Parent Versions

The Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1999) is a self-report instrument for youth aged 8 to 18 years old (see Appendices D and E). Both the child- and parent-report versions were used in the current study. The SCARED is a 41-item questionnaire that screens for Diagnostic and Statistical Manual of Mental Disorders Edition 5 (American Psychiatric Association, 2013) criteria of five anxiety disorders: panic/somatic, generalised anxiety, separation anxiety, social phobia, and school phobia (Birmaher et al., 1999). Items are scored on a 3-point scale that ranges from 0 = not

true or hardly ever true, 1 = somewhat or sometimes true, to 2 = true or often true. Total scores ≥ 25 indicate the likely presence of an anxiety disorder. The SCARED is a reliable, valid, and sensitive measure to screen for childhood anxiety disorders (Behrens et al., 2019). Overall, it has good internal consistency (Cronbach's alpha = 0.9), as do each of the five factors (Cronbach's alpha ranging between .78 and .87; Birmaher et al., 1999). It has been demonstrated to successfully discriminate anxiety from other disorders, including depression and disruptive disorders (Birmaher et al., 1999; Rappaport et al., 2017). One exception to this was the finding that the parent SCARED failed to discriminate anxiety from depression (Birmaher et al., 1999). Large scale studies have found weak to modest informant agreement between the child- and parent-report on the SCARED (Behrens et al., 2018; Rappaport et al., 2017). SCARED total and subscale scores have demonstrated moderate to excellent test-retest reliability (Behrens et al., 2018; Muris et al., 1999).

Pause Breathe Smile Anxiety Questionnaire – Child and Parent Versions

The Pause Breathe Smile Anxiety Questionnaire was created for the current study, with child- and parent-report versions (see Appendices F and G). It is an 11-item questionnaire that assesses anxiety symptoms and emotional regulation strategies. The difference between the versions is that the children answer questions about themselves, whereas the parents answer about their child. Examples of questions on the parent version include, "My child feels anxious or worried", "My child can cope with difficult feelings", and "Worry or anxiety stops my child doing things". Examples of questions on the child version include, "I feel anxious or worried", "I can cope with difficult feelings", and "Being worried or anxious stops me doing things". Items are scored on a 5-point scale with 0 = never, 1 = occasionally, 2 = sometimes, 3 = often, 4 = always. Some items are reverse scored. The minimum score is 0, and the maximum score is 44. Higher scores indicate poorer emotional regulation strategies and higher anxiety symptoms.

Pause Breathe Smile Relationship Questionnaire – Child and Parent Versions

The Pause Breathe Smile Relationship Questionnaire was created for the current study with child- and parent-report versions (see Appendices H and I). It is a 12-item questionnaire that measures the quality and closeness of the relationship between parent and child, how effectively the parent helps the child manage emotions, and the degree of interpersonal conflict in the household. Examples of questions on the child version include, "Mum/Dad listens to me", "I can talk to Mum/Dad when I am worried or anxious", and "There are arguments in our household". Examples of questions on the parent version include, "My child feels that I listen to him/her", "My child can talk to me when he/she is worried or anxious", and "My child feels that I am calm and helpful". Items are scored on a 5-point scale with 0 = all the time, 1 = most of the time, 2 = about half the time, 3 = sometimes, 4 = not at all. Some items are reverse scored. The minimum score is 0, and the maximum score is 48. Higher scores indicate poorer relationship quality and higher incidences of conflict at home.

Semi-Structured Post-Course Interview – Children and Parents

Upon completion of the course, each family attended a semi-structured interview with one of the course facilitators. This explored benefits they may have gained from PBS, changes they noticed in themselves and family relationships after the programme, their use of the home audios, and gave them the opportunity to comment generally about their experience in the course.

Procedure

Two cohorts of the PBS programme were included in the study. The first cohort completed the course from August to September 2019, and the second during February to April 2020. Following their enrolment in the course, each family attended an intake assessment with the programme lead- or co-facilitator. This interview investigated the child's

and parent's reasons for wanting to participate in PBS, and the nature of any psychological or emotional difficulties the child may be experiencing. Children then completed the child versions of three psychological questionnaires: the SCARED, the Pause Breathe Smile Anxiety Questionnaire, and the Pause Breathe Smile Relationship Questionnaire. Parents completed the parent-version counterparts of these measures. Those enrolled in the course between July 2019 and February 2020 were invited to participate in the study. All consented to participate, however two dyads were not included in the study; this was due to one family not completing the course, while another did not complete the post-treatment questionnaires. The information sheet and consent form given to participants can be found in Appendix B. Children signed assent forms, which had been adapted to their developmental level, in place of consent forms. The assent form given to child participants can be found in Appendix C. Within two weeks of completing the course, participants attended a semi-structured interview with one of the course facilitators, and completed the same questionnaires as those in their intake assessment.

Due to the national lockdown from March to June 2020 in response to the COVID-19 pandemic, the second cohort completed their final three classes and post-course interviews via the online communication platform, Zoom.

Data Analyses

Modified Brinley Plots

Modified Brinley plots were used to display the post-treatment relative to baseline scores on each questionnaire. Modified Brinley plots are a means of illustrating individuals' treatment responses within the background of group information (Black et al., 2018). SigmaPlot version 13.0 was used to create all modified Brinley plots. Plots displaying results of the child and parent versions of the SCARED include clinical cut-offs and a reliable change index (RCI), to allow observation of clinically significant change (Black et al., 2018).

The protocol of Jacobson and Truax (1991) was used to calculate the RCI. First, the standard error of measurement was calculated using:

$$SE_M = s\sqrt{1 - r_{xx}}$$

(where s = the standard deviation of the representative sample for a particular measure, and r_{xx} = the reliability/consistency of the measure) and the standard error of the difference score (SE_{diff}) is calculated as:

$$SE_{Diff} = \sqrt{2}\,(SE_M)^2$$

Ultimately, RCI is derived as:

$$RCI_{(.05)} = 1.96SE_{Diff}$$

$RCI_{(.05)}$ indicates the minimum change score between baseline and post-treatment necessary to reject the null hypothesis that the change is simply a product of measurement error $p < 0.05$ (Black et al., 2018). For an individual's observed change from baseline to post-treatment, to be considered statistically significant it must exceed the RCI (Jacobsen and Truax, 1991). Psychometric data, SE_M, SE_{Diff}, and RCI values for the SCARED are displayed in Table 1.

Table 1

Standardised and Calculated Data for SCARED Child- and Parent- Versions

Measure	Citation[a]	Cronbach's alpha	Standard deviation	SE_M	SE_{Diff}	RCI
SCARED-C	Birmaher et al. (1999)	.90	14.80	4.60	6.62	12.98
SCARED-P	Wren et al. (2007)	.82	12.40	5.26	7.44	14.58

Note. SCARED-C: Screen for Child Anxiety Related Emotional Disorders – Child Version; SCARED-P: Screen for Child Anxiety Related Emotional Disorders – Parent Version.

Both the standard deviation values were sourced from the total score on the SCARED.

[a]Refers to the published study used to calculate the RCI.

Effect Sizes

Cohen's *d* effect sizes and common language effect sizes (CLES) were calculated for post-treatment relative to baseline scores for each questionnaire, using the subscript conventions of Lakens (2013). The CLES can be calculated from Cohen's *d*, and communicates the likelihood that a person has a higher value on one measurement than another (Lakens, 2013). In the context of this study, it expresses the probability that a participant had a lower score post-treatment relative to their baseline; this is indicative of improvement in each of the measures used in this study.

Thematic analysis

Thematic analysis was conducted to investigate themes in responses to interview questions. All eleven participant interviews were included. Analysis was modelled on the methods of Boyatzis (1998) and Braun and Clarke (2006) for identifying, coding and describing themes within the data. Two analysts read through the interviews and familiarised themselves with the data. An initial list of ideas about potential patterns and points of interest in the data was generated. Labels (codes) were created that identified important features of the data. The entire data set was then systematically coded, resulting in the data being organised into meaningful groups. Next, codes were sorted into potential themes; a mind-map was used to explore how different codes could combine to create an overall theme. Once the candidate themes were developed, they were applied to the data set to consider whether they accurately captured its overall meaning and content. During this stage, some themes were divided, merged with other themes, or discarded. The resulting themes were then named and refined; this involved creating a clear description of all themes and specifying what features of the data they each captured. This ensured each theme was clearly differentiated from other themes. Part of the refinement process involved identifying subthemes within some of the themes; this gave structure and clarity to the more complex themes.

Results

Pause Breath Smile Anxiety Questionnaire – Child Version

A modified Brinley plot, graphing children's self-reported pre- and post-treatment scores on the Pause Breathe Smile Anxiety Questionnaire – Child Version, is shown in Figure 1. Higher scores on this measure indicate poorer emotional regulation abilities and more severe anxiety symptoms. The plot demonstrates that about half the children improved (indicated by circles below the diagonal line), while the remainder experienced little change or a slight worsening of their emotion regulation abilities and anxiety symptoms (indicated by circles close to or above the diagonal line). There is some indication that those with the highest baseline scores experienced the most improvement, whereas those with lower scores at baseline experienced relatively modest change. Overall, participants demonstrated lower scores post-treatment (M = 14.31, SD = 6.70) relative to baseline (M = 19.62, SD = 6.93, $t_{(12)}$ = 2.52, p = .03, 95% CI [0.72 – 9.90], d = -.78 [-.09, -1.45]), indicating improvement in anxiety symptoms and emotional regulation. The likelihood that a participant had a lower score post-treatment than their baseline is 76% (CLES = .76).

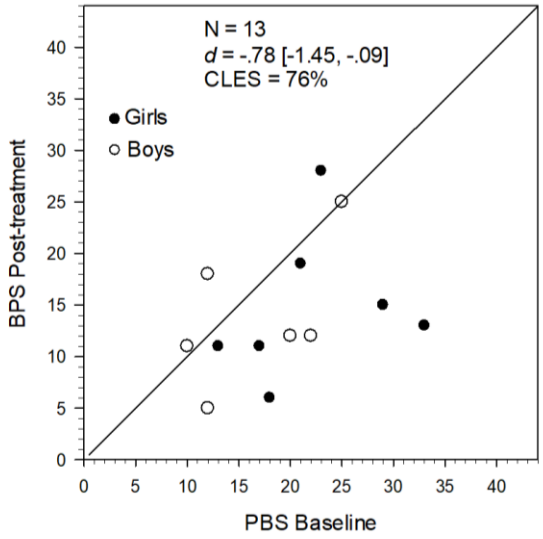
Pause Breathe Smile Anxiety Questionnaire – Parent Version

Figure 2 displays results of the Pause Breathe Smile Anxiety Questionnaire – Parent Version in a modified Brinley plot. On this measure, parents rated their children's emotional regulation abilities and anxiety symptoms pre- and post-treatment. Higher scores on this measure indicate poorer emotional regulation abilities and more severe anxiety symptoms. The plot demonstrates that most parents perceived improvement in their children's ability to regulate emotions and reduction in their children's anxiety symptoms (indicated by circles below the diagonal line), while the remainder noticed little change (indicated by circles close to the diagonal line). Overall, there was a significant change in parental ratings of their children's anxiety and emotional regulation abilities on this measure post-treatment (M =

18.1, *SD* = 5.37) relative to baseline (*M* = 28.2, *SD* = 7.0, $t_{(12)}$= 5.21, p <.01, 95% CI [5.90 - 14.33], *d* = 1.63 [2.69 - .52], indicating parents perceived an improvement in their child's anxiety symptoms and emotional regulation abilities. The likelihood of a lower score post-treatment than at baseline is 93% (CLES = .93).

Figure 1

Modified Brinley Plot Graphing the Pause Breathe Smile Anxiety Questionnaire – Child Version at Baseline and Post-treatment



Note. The solid diagonal line indicates where dots would fall if there was no change in scores from baseline to post-treatment. N = number of participants. *d* = Cohen's *d* effect size. CLES = common language effect size.

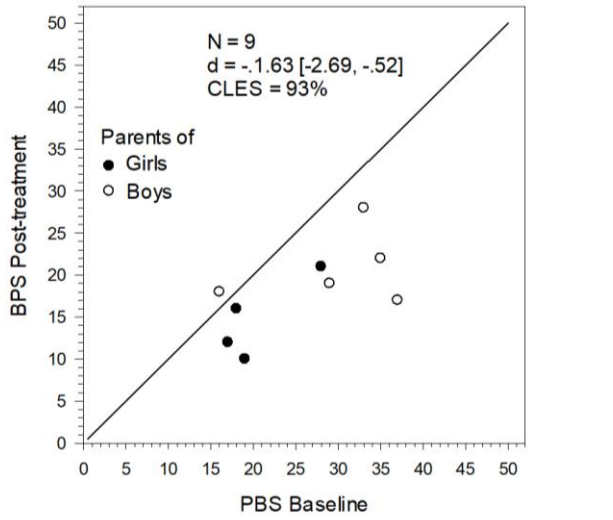
Pause Breathe Smile Relationship Questionnaire – Child Version

Figure 3 displays results of the Pause Breathe Smile Relationship Questionnaire – Child Version pre- and post-treatment in a modified Brinley plot. On this measure, children rated the quality of their relationships with the parent who attended the course with them. Higher scores on this measure indicate poorer relationship quality. The plot demonstrates that most children perceived improvement in the relationship with their accompanying parent (indicated by circles below the diagonal line). Overall, participants demonstrated lower scores post-treatment (*M* = 8.54, *SD* = 5.06) relative to baseline (*M* = 12, *SD* = 6.31, $t_{(12)}$ = 2.24, p = .05, 95% CI [.09 – 6.83], *d* = .61 [1.18 - .01]. This indicates children perceived their

parent as more emotionally responsive and felt closer to them after the course. The likelihood of a lower score post-treatment than at baseline is 71% (CLES =.71).

Figure 2

Modified Brinley Plot Graphing the Pause Breathe Smile Anxiety Questionnaire – Parent Version at Baseline and Post-treatment



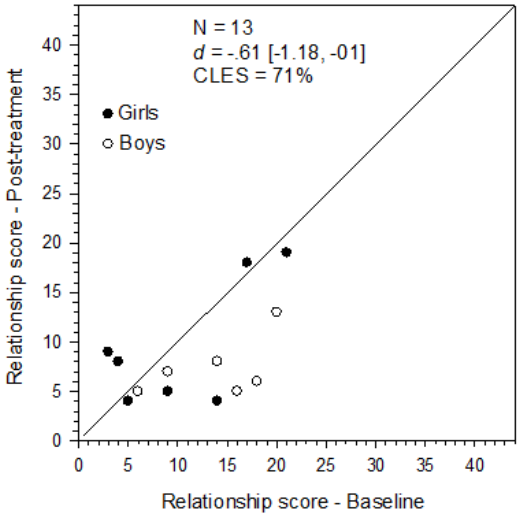
Note. The solid diagonal line indicates where dots would fall if there was no change in scores from baseline to post-treatment. N = number of participants. *d* = Cohen's *d* effect size. CLES = common language effect size.

Pause Breathe Smile Relationship Questionnaire – Parent Version

Figure 4 displays results of the Pause Breathe Smile Relationship Questionnaire – Parent Version pre- and post-treatment, in a modified Brinley plot. On this measure, parents rated the quality of their relationships with their child. Results indicate there was non-significant change from baseline (M = 11.01, SD = 3.90) to post-treatment (M = 11.15, SD = 4.1, $t_{(12)}$= .11, p = .92, 95% CI [-3.30 – 3.0]), as shown by most circles falling close to the diagonal line.

Figure 3

Modified Brinley Plot Graphing the Pause Breathe Smile Relationship Questionnaire – Child Version at Baseline and Post-treatment



Note. The solid diagonal line indicates where dots would fall if there were no change in scores from baseline to post-treatment. N = number of participants. *d* = Cohen's *d* effect size. CLES = common language effect size.

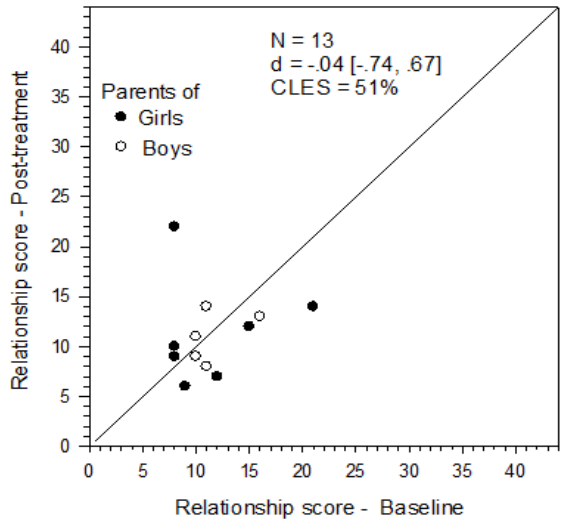
Screen for Child Anxiety Related Emotional Disorders - Child Version

Figure 5 displays results of the Screen for Child Anxiety Related Emotional Disorders (SCARED) - Child Version pre- and post-treatment in a modified Brinley plot. This plot shows total scores on the measure. Higher scores are indicative of more severe anxiety symptoms. A score of 25 or above is considered indicative of an anxiety disorder (Birmaher et al., 1999), which is marked by the horizontal and vertical lines on the plot. Five participants were above this threshold at both baseline and post-treatment. Three participants who were above threshold at baseline, were below threshold at post-treatment, indicating they no longer reached the threshold for an anxiety disorder; however, only one of these made an improvement that exceeded the RCI. Results demonstrate there was non-significant change from baseline (M = 30.15, SD = 13.89) to post-treatment (M = 25.46 SD = 25.46, $t_{(12)}$ = 1.39, p = .19, 95% CI [-12.03 – 2.64]) at a group level. The dotted diagonal line represents the RCI. Circles that fall below this line reflect a reliable decrease in symptomatology; that is,

the change is larger than would be expected due to measurement error alone. Of the eight children who had a lower score at post-treatment than at baseline, four demonstrated a reliable decrease in anxiety symptomatology. While the group-level statistical analysis indicates no reliable improvement on this measure, the modified Brinley plot demonstrates that nearly one third of children experienced a decrease in symptoms (that exceeded the RCI).

Figure 4

Modified Brinley Plot Graphing the Pause Breath Smile Relationship Questionnaire – Parent Version at Baseline and Post-treatment



Note. The solid diagonal line indicates where dots would fall if there were no change in scores from baseline to post-treatment. N = number of participants. *d* = Cohen's *d* effect size. CLES = common language effect size.

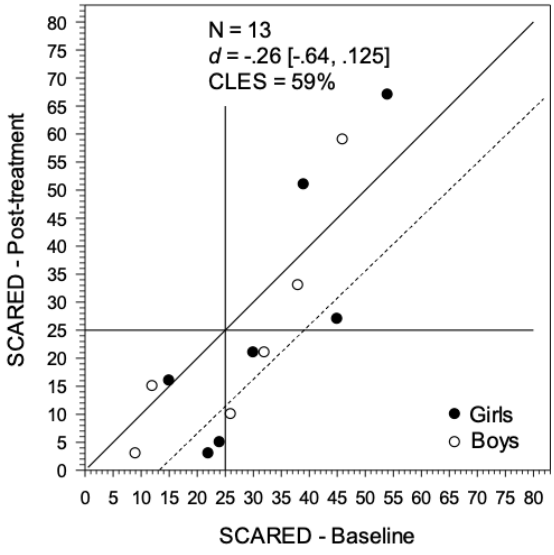
Screen for Child Anxiety Related Emotional Disorders – Parent Version

Figure 6 displays results of the SCARED Adult Version pre- and post-treatment in a modified Brinley plot. This questionnaire measures parents' perceptions of their children's anxiety symptomatology. The plot displays the total score on the measure. A score of 25 or above is considered indicative of an anxiety disorder, which is displayed by the horizontal and vertical lines. The dotted diagonal line represents the RCI. Four children who were above the threshold indicating an anxiety disorder at baseline, were below that threshold post-treatment. Conversely, two children who were below the threshold at baseline, scored above

threshold at post-treatment. Results demonstrate a decrease in children's anxiety symptoms from baseline (*M* = 28.92, *SD* = 11.72) to post-treatment (*M* = 20.15, *SD* = 6.04, $t_{(12)} = 2.88$, p = .01, 95% CI [2.15 – 15.39], *d* = .94 [.67 - .19]. The likelihood that a participant had a lower score post-treatment than their baseline is 79% (CLES = .79). However, none of the children with decreased scores on the measure from baseline to post-treatment exceeded the RCI; thus, measurement error cannot be ruled out as an explanation for the observed change. The use of both statistical and clinical significance measures here demonstrates the differing inferences that can be drawn from the two approaches. While the effect sizes indicate statistically reliable change, clinically significant improvement on this measure cannot be inferred.

Figure 5

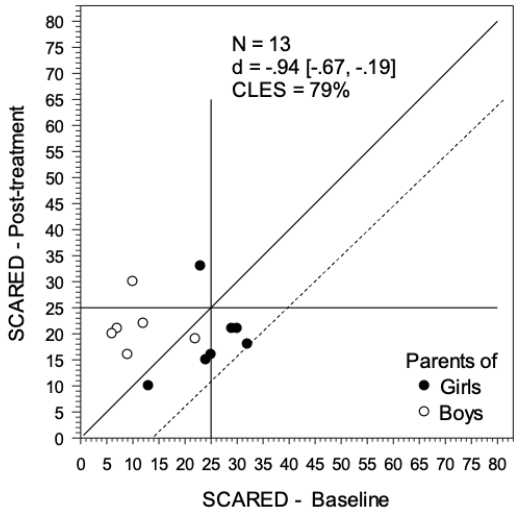
Modified Brinley Plot Graphing the Screen for Child Anxiety Related Emotional Disorders – Child Version at Baseline and Post-treatment



Note. The solid vertical and horizontal lines represent the clinical cut-off values. The solid diagonal line indicates where dots would fall if there was no change in scores from baseline to post-treatment. The dotted diagonal line represents the reliable change index. N = number of participants. *d* = Cohen's *d* effect size. CLES = common language effect size.

Figure 6

Modified Brinley Plot Graphing the Screen for Child Anxiety Related Emotional Disorders – Parent Version at Baseline and Post-treatment



Note. The solid vertical and horizontal lines represent the clinical cut-off values. The solid diagonal line indicates where dots would fall if there were no change in scores from baseline to post-treatment. The dotted diagonal line represents the reliable change index. N = number of participants. *d* = Cohen's *d* effect size. CLES = common language effect size.

Thematic analysis

Two core themes emerged from thematic analysis: *course-specific feedback* and *the process of PBS.* As depicted in Figures 7 and 8, these are higher-level themes that diverge into multiple subthemes. Within this section, P = statement made by a parent and C = statement made by a child; the adjacent number is the participant's identification number.

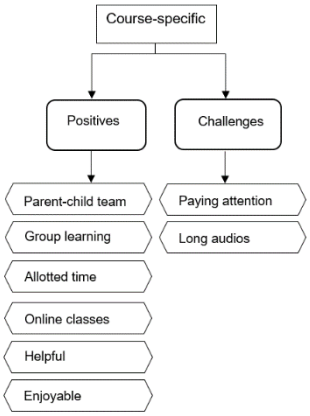
Course-specific feedback

The theme *course-specific feedback* reflects statements from participants about positive aspects of the course, and challenges related to the course. Accordingly, this theme consists of two subthemes: *course positives* and *course challenges.* The subtheme, *course positives*, reflects comments from participants about experiencing the course as enjoyable and useful. Six lower level subthemes emerged under this subtheme: *enjoyed learning as a family*

team, enjoyed group learning environment, appreciated allotted time, online classes were successful, course was helpful and well-structured, and *course was enjoyable.*

Figure 7

The Theme Course-Specific Feedback from Thematic Analysis



Note. This figure displays the subthemes and lower level subthemes of the *course-specific feedback* theme.

The subtheme, *enjoyed learning as a family team*, reflects reports from parents about appreciating the experience of learning alongside their child.

P7: *It was refreshing – a brand new style for the whole family. We could learn together and discuss what we learnt.*

P8: *It was good for him and I to do something like that together. To both engage.*

P9: *As a parent, you don't usually get to be in that classroom environment, where you're sitting and you're learning with your child. It's something really positive and something you can work on together.*

Enjoyed group learning environment is a subtheme that reflects statements from participants about benefitting from a shared learning experience with other group members.

C10*: I liked breaking up into child and adult groups to discuss things.*

C2: *It was really good talking to others [in the group]*.

C3: *It was good hearing from others [in the group]*.

P3: *Other parents' engagement was really valuable. A sense of sharedness comes from that.*

P3: *I would like us to stay connected – for Zoom meetings to continue for conversations between parents and the kids.*

C5: *It was good learning with other kids, instead of it just being something we do with Mum.*

Appreciated allotted time is a subtheme that reflects statements from parents about appreciating the dedicated hour each week to practice mindfulness and take a break from everyday routines.

P1: *It was a really nice time to sit and reflect.*

P11: *I liked coming in and doing the meditating to start off. That sets you up for a good hour. You can let everything else go.*

P5: *It was nice to have time to do mindfulness during the session because you don't often find the time to do it otherwise. It was nice to have allotted time to practice.*

Online classes were successful is a subtheme that captures statements from parents about the course working well online, via Zoom, when the course moved online during the COVID-19 national lockdown.

P3: *I enjoyed the classes, especially the online classes. They worked really well.*

P5: *I found the Zoom classes worked really well.*

Course was helpful and well-structured is a subtheme that reflects participants' expressions of the course content being useful, age-appropriate, and finding its structure and home resources well laid out.

P1: *It was a good fit for my child at her age [child is nine years old].*

P11: *I think [the course] is pretty good. It's a good balance of different things.*

C2: *The course was really good – taking deep breaths, talking to others.*

P3: *The framework was wonderful. It dealt with all the important things.*

P9: *The course was so skilfully collated and given. [The course facilitator] seems very calm and very nice.*

P4: *The way the programme was laid out with the box and resources was very accessible. Quite effective in a short time frame – very manageable. There were small steps until you can integrate it into daily life. The emails with links to the resources made it really easy to access. The resource book was really cool – regularly doing things at home.*

C8: *I basically found all of it useful.*

C9: *It was helpful, good, and fun. I learnt a lot.*

P9: *PBS was brilliant in every way, shape and form.*

Course was enjoyable is a subtheme that captures statements from participants about enjoying their time in the classes.

C1: *I really loved it.*

C6: *I enjoyed it.*

C4: *I mostly liked it.*

P8: *I really enjoyed it.*

P9: *We thoroughly enjoyed it.*

The second subtheme within the course-specific feedback theme, *course challenges*, reflects aspects of the course participants reported as challenging, or a barrier to their engagement with its content. Two subthemes emerged under this subtheme: *audios too long* and *hard for active children to pay attention.*

The subtheme, *long audios*, reflects statements from participants that the home audio recordings were too long or hard to engage with for some children.

P3: *We barely listened to the audios because [my child] sometimes said he hated it.*

P6: *We found the audios from the course a bit too long and a bit above their level, especially for my [seven- year-old child]*.

Hard for active kids to pay attention is a subtheme that reflects statements from some parents about it being difficult for their child(ren) to stay engaged with the class for an hour. They suggested more physical activity would be conducive to engagement.

P7: *At times, it was boring for [my child]. It was hard for her to pay attention. More games and interaction, and less talking would be good.*

P8: *I think for active kids, sitting for an hour is difficult. A more activities-based programme might be better.*

The process of PBS

The theme, *the process of PBS*, reflects participants' statements about the process of implementing PBS skills and knowledge in everyday life, and the changes resulting from the course. As depicted in Figure 8, four core subthemes form the theme *the process of PBS*: *using skills in everyday life, improved skills, improved wellbeing, and improved parent-child relationships.*

Using skills in everyday life. This subtheme reflects participants' reports about their implementation of PBS skills in their own daily life and environment. Participants reported encountering challenges as they attempted to translate PBS skills into everyday situations. Participants described finding solutions to these challenges, and reported ways of implementing newfound PBS knowledge into everyday life. The distinction between participants' reports of challenges and finding solutions to challenges is reflected in the two subthemes of *challenges* and *solutions.*

The subtheme, *challenges*, includes participants' reports related to difficulties consistently implementing PBS skills and experiences of finding PBS skills and techniques ineffective in the midst of intense emotion, such as anger and panic.

P3: *We have got the knowledge, but making it happen and practising isn't happening.*

P11: *In that hot, blown up moment, she can't seem to use PBS. It takes quite a bit of calming down first. We don't use PBS right in the moment, when it's so intense.*

P9: *It's a very easy technique, but it can be hard to use when you're in the midst of a panic attack. It doesn't feel like enough when she's in the midst of a panic attack.*

The subtheme, *solutions*, reflects participants' reports of how they found ways to overcome the challenges or difficulties in implementing PBS. *Solutions* included regular use of the course audios, regular practice in order to make the skills habitual, consciously building PBS skills into life, and the benefits of involving other family members with the practice of PBS.

P11: *I think we need to get into the habit [of using the audios] again because it really worked for helping her get to sleep.*

P3: *We rarely used the audios. I think this is why we didn't get as much out of the course.*

C4: *It's becoming easier with more practice.*

P7: *I'm unconsciously using PBS skills now [after practice].*

P4: *We are building [PBS] into family meetings, and other things, like sitting at the traffic lights.*

P4: *We are trying to weave it through family life and have started regular family meetings.*

P9: *[My partner] benefitted from just a few sessions and made an effort to do more with [our child].*

P1: *I would like to implement [PBS skills] more consistently and would have liked [my partner] to be part of it.*

Improved skills. This theme reflects new skills or knowledge gained from PBS, which was considered important or useful to participants.

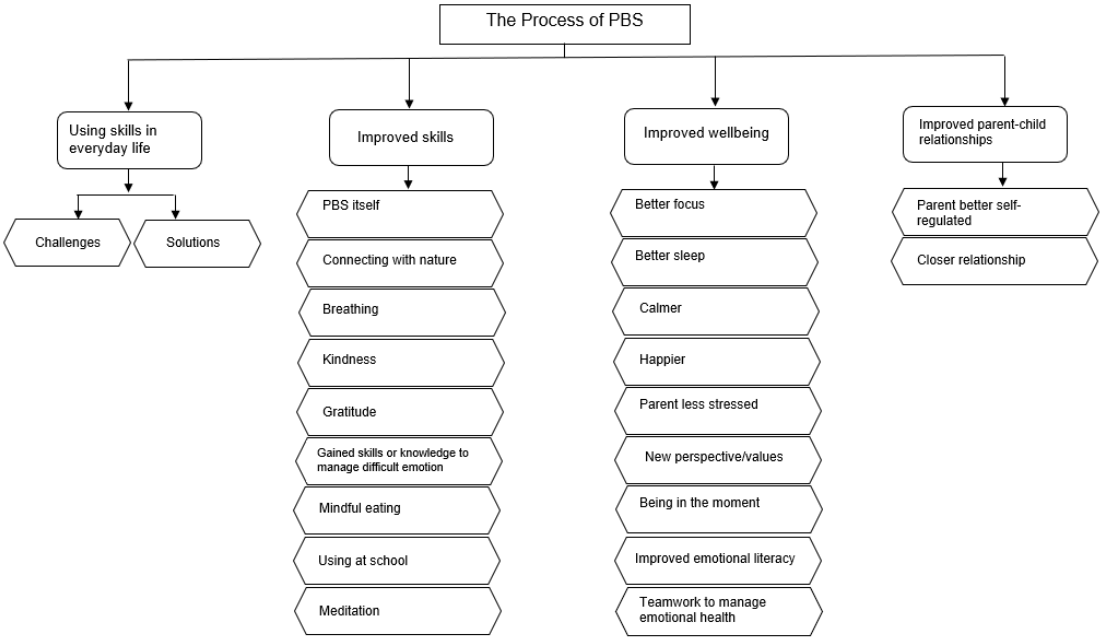
The subtheme, *Pausing, Breathing, and Smiling* reflects participants' reports that the core course skill of pausing, taking a breath, and smiling was identified as an easy and effective technique for managing difficult emotions and stress. It was sometimes cited as the most useful skill obtained from the course.

P4: *I appreciate that something so short [pausing, breathing, and smiling] can have such a good effect – quite profound.*

C6: *The pause, breathe, and smile strategy was the most helpful [tool from the course]*.

Figure 8

The Theme Process of PBS from Thematic Analysis



Note. This figure depicts the subthemes and lower level subthemes of *the process of PBS* theme.

The subtheme, *connecting with nature*, reflected participants' reports that being in the natural environment was conducive to wellbeing and something participants reported they desired to do more frequently.

P6: *We aim to spend time in nature. The course reinforced the benefits of nature.*

P10: *The course helped me recognise the important things, like connection to nature.*

Deep breathing is a subtheme that was cited by participants as a useful means of promoting calm.

C3: *I use breathing when I get in a mood. It helps most of the time.*

C12: *Breathing when I'm worried [is helpful].*

The subtheme, *kindness*, reflects participant's reports that practicing kindness benefitted their wellbeing, and describing an initiative to focus on kindness in daily life.

C1: *I really benefitted from the kindness and gratitude practices.*

P4: *We have started using a kindness box [in our family]*.

Gratitude is a subtheme that reflects participants' statements about consciously considering what they were grateful for in their lives. This practice was reported to increase mood.

P10: *I find being grateful for what I have very helpful for my mood. Being grateful for my body.*

P6: *Being grateful [was one of the most helpful practices of the course]*.

C1: *I really benefitted from the kindness and gratitude practices.*

The subtheme, *gaining skills and knowledge to manage difficult emotions*, captures participants' expressions of having gained the knowledge or tools to regulate themselves when distressed, without an explicit mention of applying it in their life.

C3: *I have learnt the skills to calm down.*

P1: *It gave me ideas of what to do when stressed.*

P3: *It was a good reminder that there are tools to use.*

Mindful eating is a subtheme cited by children as being an enjoyable and useful skill learnt in the course.

C12: *I liked mindful eating the most.*

C4: *Mindful eating was the most helpful [skill I learnt]*.

Child using the skills at school is a subtheme that refers to instances where the parent or child stated the PBS skills were proving useful in the school setting.

C10: *I'm able to calm down when sad and angry. I use it at home and at school.*

P11: *She's taken the skills to school.*

The subtheme, *meditation*, reflects one family mentioning meditation had been incorporated into their life. The parent had downloaded a meditation app to practice mindfulness with her children every day, as a means of continuing the benefits they had gained from the course.

P6: *We use the Insight App every day. We want to do meditation every day.*

Improved wellbeing. This subtheme reflects the positive changes participants reported in their lives that developed as a result of their PBS skills. These changes contributed to better overall emotional health, wellbeing and quality of life.

The subtheme, *better focus*, reflects that increased focus or productivity was a noted benefit of using PBS skills.

P10: *Take a minute or ten, and calm down, and you actually become more productive instead of slogging away, slogging away*.

C4: *It's easier to focus. I can focus on the task I'm doing [when I use PBS].*

Better sleep is a subtheme that reflects frequent reports of improved sleep for both parents and children. Participants reported being able to fall asleep faster and easily re-settle when they woke in the night.

C8: *I use PBS at night to help me calm down from the day and I get to sleep much quicker.*

P5: *When I wake in the night, it's helpful for getting back to sleep.*

C13: *It's easier to get to sleep when I remember to use PBS.*

Feeling calmer is a subtheme reported frequently by parents and children. There were instances where they noticed it in themselves, and noticed it in each other.

C2: *Mindfulness helps me calm down, slow down.*

C12: *I use it most days, especially when I'm angry and having sibling fights. I feel calmer.*

P10: *[My child] is faster to calm down after a flare up.*

C4: *[PBS] helped Mum. She's less stressed and able to calm down.*

The subtheme, *feeling happier*, was reported by one child, as an outcome of using the Pause, Breathe and Smile technique itself.

C10: *I'm more happy. I'm more playful at home and school.*

Parents being less stressed emerged as a subtheme. Some parents noted they were able to use their PBS learnings to manage stress in their everyday lives.

P1: *[The course] is a good thing to go to. It really helps you manage stress.*

P6: *I found it good for calming me down when stressed.*

The subtheme, *new perspective*, reflects reports of developing new life values and perspectives through the course. This subtheme emerged from parents' reports only, and pertains to statements about re-evaluating important aspects of life and forming new priorities through that consideration.

P10: *It opened my eyes to a lot of things. Made me think about stuff in a different way. I don't have to be finding new things to make me happy. You can be content with what you've got in your life right now. I'd always been driven to get stuff and set my mind*

on a goal and work hard to get there. And it just becomes the next thing, then the next thing. I've been recognising the important things, like connection to nature and relationships with our children.

P9: *[Referring to evaluating her relationship with her child] I think we get so caught up with the day to day that we don't actually think, 'how am I doing with that sort of stuff?'.*

Being in the moment is a subtheme reported exclusively by parents that reflects the value of being mindful or grounding oneself in the present. This practice was reported as producing a sense of gratitude or curiosity for the moment.

P10: *I like to stop and appreciate the moment. I use that technique a lot. It naturally creates curiosity.*

P11: *The here and now thing really got through to me. Taking the time with my kids to stop and really be in the moment and really appreciate what you're doing. I've taken that away the most.*

P1: *Being grateful and stopping, taking notice of yourself and what's going on [has been the most helpful practice]*.

The subtheme, *improved emotional literacy,* is comprised of three interlinked subthemes: *increased awareness of emotional state, finding space between emotion and response*, and *better regulation of difficult emotions.* The *increased awareness of emotional state* and *finding space between emotion and response* subthemes are conceptualised as the mechanisms that underpin the resulting *better regulation of difficult emotion* subtheme.

The *increased awareness of emotional state* subtheme refers to reports of participants becoming more attuned to their emotions and better able to notice what they are feeling.

P5: *I'm noticing when I'm feeling tense or stressed or wound up, and those are the times I practice PBS.*

P7: *I pay more attention to my internal feelings – I'm noticing them more.*

P4: *I'm noticing myself more if I feel busy and stressed, then using PBS to re-centre myself – I think I'm doing that more often.*

P6: *We're all more attuned to the "red zones" [note: the term 'red zone' is a phrase used in the course to describe emotions like anger, anxiety, and frustration]*.

The *finding space between emotion and response* subtheme reflects reports of being able to find distance from one's emotions, and sometimes being able to change the habitual responses emotions can evoke.

C8: *[The course] has changed how I react to my emotions. I don't attack [when I feel angry], I just calm down a bit more, and get on with my day.*

P5: *I stop and think a bit more, instead of immediately reacting [when I feel highly emotional]*.

P3: *In the pause space, you choose what comes next.*

P8: *If I feel myself getting angry, I can walk away from it.*

P11: *I noticed [my child] is definitely stopping before she's getting to the blowing up stage. She's realising, 'Ok, this is not where I need to go. I don't need to yell or slam doors. I can just stop and have a breath or go to my room'. Then come back when she's calm. She's realising what she's doing a lot more. It's not as crazy as it used to be.*

The *better regulation of difficult emotions* subtheme captures reports of successfully using PBS course skills to soothe feelings of stress, anger, tension, sadness and worry in everyday life.

C13: *[When I Pause, Breathe, and Smile] I'm able to calm down when I'm sad or angry.*

P8: *I find myself getting more and more wound up, so [PBS skills] are useful for that.*

C2: *I use PBS most days, especially when angry or fighting with my siblings. I feel calmer and can see things aren't such a big deal.*

P4: *When I'm overwhelmed with stress, PBS really helps.*

C12: *Using breathing when I'm worried is helpful.*

The subtheme, *teamwork to manage emotional health*, consists of four interlinked subthemes: *increased empathy, increased communication between parent and child, synergy between family members,* and *parent better able to help child regulate difficult emotions.* These subthemes share the common element of social connectedness being an important aspect of the PBS course.

Increased empathy is a subtheme reported by both adult and child participants. Increased empathy for family members and others generally was a noted benefit of the course.

C8: *I'm understanding more – like how other people feel — from being in the group. It was useful to hear other people talk about how they feel.*

P6: *We recognise each other's feelings more [referring to her two children she attended PBS with] – it has brought us closer together.*

Increased communication between parent and child is a subtheme reported by parents. This subtheme captures expressions of enhanced discussion of emotions between parent and child. It also reflects the benefits of developing a common language, by virtue of attending a course together, that facilitates the communication of emotional states.

P1: *The course has given us a common language and framework, which has helped our relationship.*

P11: *I think we communicate more and it's made our relationship stronger.*

P3: *It's helped give us a shared language and reinforced messages that I was trying to get across.*

P5: *We talk about how we're feeling more and noticing emotions more.*

Synergy between family members is a subtheme reported by parents. It reflects statements that evidence a process of cooperation between family members in learning to use PBS skills in everyday life. This subtheme was sometimes mentioned in regard to family conflict; namely, a parent reported they remind each other to use PBS during arguments.

P3: *I'm noticing I'm able to say to [my child], 'You're escalating', and asking him how he is feeling and what's happening inside him – then reminding him to pause and breathe.*

P5*: When he's getting wound up and he's getting stressed, he's better able to tell me. I can tell him to take some deep breaths and carry on.*

P7: *When I'm angry and want to shout, [my child] reminds me, I should use PBS!*

P8: *When we have an argument, we remind each other: PBS! Keep calm!*

Parent better able to help child regulate difficult emotions is a subtheme reported by both parents and children. It reflects statements relating to the parent having the skills to help their child manage distress.

P6: *It's helped me help them calm down. It's been life changing.*

C5: *[When I'm upset] Mum understands and knows how to help.*

Improved parent-child relationships. This theme reflects reports from participants that evidence the strengthening of the parent-child relationship through attending the course and implementing PBS in their lives together.

The subtheme, *parent better self-regulated*, captures statements from parents that indicate a consideration of their habitual interactions with their children, and efforts to manage emotions that can inflame arguments with them. These reports often related to increased awareness of taking out their frustrations on their child, and efforts to manage their own anger during conflict.

P10: *I've been working on a lot of things. Trying not to get het up about the little things. Not to let my own frustrations out on the kids, which I used to do a lot. Being aware, being mindful, and managing that.*

P7*: The course reminded me that I should try to be calm when we argue.*

P8: *It made me look at my parenting a lot more. I just noticed how quick I am to get grumpy and turn to yelling, rather than just walking away. In the mornings, it has been very stressful, getting everything ready. I used to yell and get angry. Now I've taken a step back, I'm doing less…If I feel myself getting angry, I can walk away from it.*

The subtheme, *closer relationship*, reflects expressions from participants regarding feeling closer and more connected to the family member they attended the course with. This subtheme consists of three interlinked subthemes: *parent gains understanding of their child, quality time together*, and *feeling closer to each other*.

Parent gains understanding of their child reflects reports from parents that they have a better knowledge and understanding of their child.

P8*: It's been good for getting a better understanding of your child, and bonding with your child.*

P9*: It brings you a better understanding of where your child's at [emotionally and developmentally]*.

Quality time together captures statements from participants about spending more time together since starting PBS. These statements were often accompanied by sentiments of appreciation for more quality time with their loved one(s).

P4: *It's been good because we've been able to spend some one-on-one time together.*

C12: *We've been going to places together, doing more things together.*

C8: *It was nice spending more time together.*

Feeling closer to each other reflects statements from participants about experiencing a heightened sense of closeness or strength in the relationship with the parent or child who attended PBS with them.

P11: *I think we communicate more and it's made our relationship stronger.*

P2: *I think we are more mindful and connected with each other.*

P4: *It has deepened our relationship – more connectedness.*

P6: *We've been doing more PBS because we've been in each other's space over lockdown. We recognise each other's feelings more. It brings us closer together.*

C4*: Mum has more focus on me.*

P9: *Breathing together and talking together has brought us closer.*

Discussion

The current study used a mixed methods design to evaluate the effectiveness of PBS as a treatment for children identified as moderately anxious. The programme was adapted from its original, school-based format into a clinical intervention in which children attended the course with a parent. As hypothesised, it was found that children generally experienced reduction of anxiety symptoms and improvement in emotional literacy abilities. Furthermore, evidence of enhanced familial relationships was found; overall, children perceived the parent who attended the course with them as more emotionally responsive and supportive. Thematic analysis of post-course interview data revealed a synergy between family members in learning to implement their newfound skills in everyday life. This suggests the parent-child team can be a powerful mechanism in helping children practise skills and benefit from the course. Parent participants reported improved psychological wellbeing, which demonstrates that the therapeutic effects of the course extend to adults attending with their children. The current study is the first to find PBS to be an effective intervention for children with heightened anxiety, and a means of strengthening parent-child relationships.

Quantitative Results

Children experienced a reduction in anxiety symptoms and improvement in emotional literacy, as demonstrated by improvements on the child and parent reports of the Pause Breathe Smile Anxiety Questionnaire. Children were more equipped to manage worry and anxiety, slept better, and felt more confident in themselves upon completing the course. These results align with and expand upon previous research on PBS. Hynds et al. (2020) studied the effects of PBS at three schools, through interviews with students and teachers. Their study reported that PBS activities decreased feelings of anxiety and worrying thoughts, and improved emotional literacy in students. Bernay et al. (2016) found a significant increase in the wellbeing of students shortly after PBS, as measured by the Stirling Children's

Wellbeing Scale (SCWBS), which broadly assesses emotional and psychological wellbeing (Liddle & Carter, 2015). Furthermore, teacher and student interviews revealed reports of increased calmness, better emotional management, and improved sleep quality in children (Bernay et al., 2016). In alignment with Bernay et al.'s (2016) study, Devcich et al. (2017) found a significant increase on the SCWBS from baseline to post-treatment. A study on PBS in Waikato schools, which analysed teacher observation journals, reported increased calm and enhanced emotional literacy in students (Mindfulness Education Group, 2019). Overall, the current study is consistent with the existing research and strengthens the evidence that PBS increases calmness, emotional literacy and sleep quality in children. As the existing studies on PBS have investigated general school populations (Hynds et al., 2020; Bernay et al., 2016; Devcich et al., 2017; Mindfulness Education Group, 2019), the current study's finding that PBS is an effective treatment for children with elevated anxiety is a useful addition to the research.

Results of the Pause Breathe Smile Relationship Questionnaire child-report showed children experienced an improvement in their relationship with parents. It indicated children perceived their parent as becoming more understanding and emotionally supportive, and felt their relationship became closer. This finding aligns with prior research that found PBS benefitted participants' social skills and relationships (Rix & Bernay, 2014; Bernay et al., 2016; Hynds et al., 2020). Hynds et al. (2020) reported teachers and students were naturally using their PBS learnings at home, which produced positive impacts on familial relationships. Some teachers reported improved ability to manage stress at home, and becoming better communicators and family members (Hynds et al., 2020). Rix and Bernay (2014) and Bernay et al. (2016) noted PBS lead to better conflict resolution between peers, as a result of improved emotional management. The current study was the first to examine the effects of

PBS on parent-child relationships; the finding that relationships were enhanced through the course is a novel and important addition to PBS research.

No changes from baseline to post-treatment were found for the Pause Breathe Smile Relationship Questionnaire parent-report, and the SCARED child and parent reports. It is interesting that children improved on the Pause Breathe Smile Relationship Questionnaire, but there was no change on the parent-report. One parent noted that she rated herself lower on the measure at post-treatment because she gained insight through the course and realised she was not parenting as well as she initially thought. It is possible this experience was shared by other parent participants, and may explain why no improvement was found on the measure. The SCARED child and parent reports may not have captured the experiences of anxiety in our participants, and therefore did not demonstrate change through treatment. It should be noted that the second cohort completed the latter part of the course and the post-treatment questionnaires during the national lockdown in response to the COVID-19 pandemic. As such, children were not attending school and were only socialising with their households. These circumstances may have confounded results of three SCARED subscales: Separation Anxiety, Social Anxiety Disorder, Significant School Avoidance. When administering the post-treatment questionnaires, some children and parents commented that it was difficult to answer questions in these subscales, as they had not recently been in the situations that evoke those types of anxiety.

The current study demonstrates the efficacy of mindfulness-based interventions for children with heightened anxiety. This is an important addition to the field, as research about mindfulness-based interventions for reducing anxiety in children is limited and has produced equivocal results (Odgers et al., 2020). A meta-analysis found mindfulness-based interventions effectively reduced anxiety in individuals aged five to eighteen who met criteria for an anxiety disorder, with a moderate effect size found overall (Borquist-Canon et al.,

2017). Mindfulness-based interventions reduced stress and anxiety in both clinical and nonclinical samples of children and adolescents in a meta-analysis of 15 randomised controlled trials (Kallapiran et al., 2015). A meta-analysis of 17 randomised controlled trials of mindfulness-based interventions by Dunning et al. (2019) found that mindfulness-based interventions significantly reduce stress and anxiety in children and adolescents; the majority of studies in the meta-analysis examined nonclinical samples. Conversely, a meta-analysis by Ruiz-Iniguez et al. (2019) of mindfulness-based interventions for anxiety in clinical and nonclinical youth populations found a non-significant effect overall. A recent meta-analysis by Odgers et al. (2020) of randomised controlled studies of mindfulness-based interventions in youth populations concluded they are likely to produce no benefit in anxiety reduction within Western populations. However, the results were moderated by location of research; when three studies from Iran were included in the analysis, a small but significant overall mean effect of mindfulness-based interventions on anxiety was found. Two of the Iranian studies were the only ones within the sample that were conducted with clinically anxious individuals; the other studies were within general school and mixed medical populations. Odgers et al. (2020) speculate that higher intervention effects from mindfulness-based interventions may be found in youth with clinical anxiety than in nonclinical populations. This assertion is supported by some research. More severe baseline anxiety has been found to be correlated with greater change in symptoms at post-treatment (Olatunji et al., 2014; Dow et al., 2007). Although participants in the current study were not formally diagnosed with an anxiety disorder, they were identified by a parent and clinically judged to have moderate to high levels of anxiety. The current study adds to the body of research that has found mindfulness-based interventions beneficial for children with elevated anxiety.

Qualitative Results

Results from qualitative analyses reflect and expand upon the two core findings of the quantitative results: improved emotional literacy and decreased anxiety in children, and enhanced familial relationships, and add novel insights into the experiences of participants. As a reflection of PBS being structured around the Māori model of hauora (holistic wellbeing) *Te Whare Tapa Whā*, this section of the discussion will conceptualise findings within these four domains: taha hinengaro, taha whānau, taha tinana, and taha wairua.

Pause Breathe Smile strengthened taha hinengaro, which refers to mental and emotional wellbeing (Durie, 1985), in the current study. Thematic analysis revealed both parents and children experienced increased calmness, better focus, and improved emotional literacy. These results align with existing studies on PBS (Hynds et al., 2020; Bernay et al., 2016; Rix & Bernay, 2014; Mindfulness Education Group, 2019). Hynds et al. (2020) reported improved focus of children in the classroom after PBS, from the perspectives of teachers and students themselves. Greater focus was a noted benefit, even in children who had notable difficulty sitting still and paying attention, in two other PBS studies (Rix & Bernay, 2014; Mindfulness Education Group, 2019). Increased calm appears to be a hallmark feature of PBS (Rix & Bernay, 2014; Mindfulness Education Group, 2019; Devcich et al., 2017; Bernay et al., 2016; Hynds et al., 2020). Hynds et al. (2020) found this benefit was not exclusive to children, as teachers also reported increased calm and better stress management after PBS. Enhanced emotional literacy and emotion regulation is reported as an outcome of PBS in the studies by Hynds et al. (2020), Bernay et al. (2016), and The Mindfulness Education Group (2019). The current study's results add to research that demonstrates PBS's positive impacts on mental and emotional health, and show these benefits extend to children with elevated levels of anxiety.

The current study found PBS is beneficial to taha whānau, which refers to the social and relational aspects of wellbeing (Durie, 1985). Through the lens of te ao Māori, whānau (family) are considered fundamental to healing illness (Durie, 1985). The current study found the connection between parent and child strengthened through the course. Furthermore, there was evidence of whānau working together to implement PBS skills in everyday life, which was found to facilitate individuals regularly practising skills, resulting in improved wellbeing. Children generally perceived their accompanying parent as more attuned to their emotional needs and more equipped to offer support, and some parents reported gaining a better understanding of their child. Existing research has found parent-child relationship quality is positively correlated with offspring's mental wellbeing across the lifespan (Stafford et al., 2016). Informed by such findings, it could be speculated that PBS can strengthen parent-child relationships, which may support children's long-term psychological health.

Results of the current study are consistent with previous research that found PBS enhances taha whānau within school communities. Improved relationships between students following PBS, with less conflict, more connectedness, and a greater sense of belonging in the classroom have been documented in research on PBS (Hynds et al., 2020; Bernay et al., 2016; Rix & Bernay, 2014). Bernay et al. (2016) reported children's improved emotional management lead to better relationships with peers and family members. This was apparent in the current study, with participants reporting that being able to control their own emotions resulted in less conflict with family members; the ability to consider one's actions instead of automatically reacting led to more positive interpersonal outcomes. Another mechanism behind improved taha whānau that has been proposed in past studies on PBS is through improved empathy. Bernay et al. (2016) reported students becoming more attuned to others' feelings, Rix and Bernay (2014) cited children developing an ability to take perspectives of others, and Hynds et al. (2020) noted teachers experiencing more empathy for their own

children. The current study's findings of increased empathy in children and parents developing a better understanding of their children's needs indicate an increased awareness of the internal experience of others. Hynds et al. (2020) noted that the common language PBS creates amongst its participants facilitates more communication about feelings and behaviours. This was also a strong theme in the findings of the current study. The common language and increased communication about emotions may have facilitated the increases in empathy and perspective taking. Furthermore, having learnt the same skills, family members were able to remind each other to use their skills in everyday life. Overall, the current study demonstrates the benefits of a shared learning experience within a whānau.

Taha tinana, which encompasses physical aspects of wellbeing (Durie, 1985), improved in the current study. Both children and parents reported improved sleep quality. This has been a reported benefit for teachers and students in existing PBS studies (Hynds et al., 2020; Bernay et al., 2016). Another key finding in the current study was the benefit of deep breathing for drawing awareness to the body and creating a sense of calm. Hynds et al. (2020) noted both students and teachers found deep breathing a useful practise for regulating oneself and calming down. Rix and Bernay (2014) and Bernay et al. (2016) found mindful breathing was one of the key skills children used from the course to calm down. Mindful eating was found to be an enjoyable technique that helped children be mindful of physical sensations in the current study. Rix et al. (2016) reported children becoming more aware of being full at lunchtime and Hynds et al. (2020) noted children appreciating food more when practicing mindful eating. As anxiety has a strong physical aspect, evidence that PBS helps children develop awareness of their bodies and teaches skills that can alleviate physical tension, such as mindful breathing, is noteworthy.

Pause Breathe Smile was found to have a positive effect on taha wairua, which broadly refers to spiritual health (Durie, 1985) in the current study. This domain of wellbeing

can be experienced through beliefs, values and practices that develop self-awareness, purpose, and identity. It can also reflect a connection to one's environment and heritage (Durie, 1985). It was found that participants developed new life values and priorities as a result of the course; some participants reported kindness, relationships, and connection to nature becoming more prominent aspects in their lives. Practising mindfulness or "being in the moment" was found to be a transformative experience for some adults, and fostered a sense of gratitude. The experience of recognising and acting in accordance with one's own values was reported to enhance feelings of wellbeing; this is the underlying philosophy of Acceptance and Commitment Therapy, which emphasises values as guiding principles that reflect what a person finds meaningful (Reilly et al., 2019). A previous study by Hynds et al. (2020) found taha wairua was enhanced through PBS. Their study reported that developing closer connections with the environment was a benefit for some participants. Additionally, the holistic model of *Te Whare Tapa Whā*, that informs the course structure, was reported as having a positive affect for Māori children, who gained further connection to te ao Māori through engaging with the model (Hynds et al., 2020). The current study further validates the holistic benefits of PBS on wellbeing, including taha wairua, and highlights its cultural responsivity to the unique philosophy of wellbeing in Aotearoa New Zealand.

Research on the benefits of mindfulness practices, which include stress and anxiety reduction (Lugwig et al., 2008; Siegel, 2010), improved sleep quality (Ludwig & Kabat-Zinn, 2008), improved wellbeing, and increased empathy and pro-social behaviour (Schonert-Reichel et al., 2015), align with results of the current study. Although still not fully understood, a key mechanism theorised to underpin some of the benefits of mindfulness is reduced emotional reactivity. This notion was supported by findings of the current study, as participants reported developing greater awareness of their emotions, and increased ability to change their automatic behavioural responses. Examples of this include being able to

persevere with difficult tasks when frustrated and being able to step away from arguments when angry. These examples may be a result of one of the core practices of the course, which was the non-judgemental noticing of emotional and bodily states. Additionally, the act of pausing, breathing, and smiling when noticing oneself becoming overwhelmed with emotion, or entering "the red zone" as it was labelled in the course, was reported to be an effective means of calming and re-centring. Overall, results of the current study suggest improved emotional literacy, which is broadly defined as awareness, identification, tolerance, and management of emotions (McLaughlin et al., 2017), is somewhat responsible for the mood and relational improvements reported by participants. The current study gives valuable insight into a potential mechanism of mindfulness and supports the theory that reduced emotional reactivity is a fundamental benefit of mindfulness-based interventions.

Limitations

Results of the current study should be considered within the context of the following limitations. The absence of a control group means the claim PBS is more effective than similar programmes or no intervention at all cannot be made. The small sample size, and self-selection of participants, means caution must be taken when extrapolating the findings to the diverse population of Aotearoa New Zealand or beyond. Participants did not identify the ethnic group(s) they belonged to, so claims cannot be made about the cultural appropriateness of the course. Poor attendance was an issue with some participants and may have confounded the results. In the second cohort, three children missed three of the classes, which equates to completing only 60% of the course. The second cohort completed their final sessions of PBS and post-course interviews under the national lockdown in response to the COVID-19 pandemic. The course's effectiveness may have been impacted by these exceptional circumstances. Two of the psychological questionnaires that were used, the Pause Breathe Smile Questionnaire and the Pause Breathe Smile Relationship Questionnaire were created

for the purposes of this study and have not been previously validated. Post-course interviews were conducted by the programme facilitators. As rapport had been established over the eight weeks of the course, participants may have erred towards giving socially desirable answers.

Strengths

A number of particular strengths of the current study should be noted. This was a multi method study, which gave a richness to its results. Idiographic and nomothetic approaches were taken to analysis. Thematic analysis of interview transcripts and modified Brinley plots allowed insight into the varied and idiosyncratic responses to the programme. Addition of the reliable change index (RCI) allows the reader to consider the alternative conclusion that may have been drawn if t-tests alone were used for analysis. This is a major strength in the study, as absolute reliance on statistical significance alone, without consideration of clinical significance can lead to misleading conclusions (Jacobsen & Truax, 1991). The analytic method used in the current study allowed consideration of each individual's data, rather than reflecting only on group means. This study was conducted in usual clinical practice, which provides higher external validity than a clinical trial (Saturni et al., 2014).

Future Directions

Replication of the study with a larger sample and the addition of a control group is recommended. It would be useful to include a control group consisting of children matched for anxiety symptoms who attend PBS without a parent. This would give insight into what influence parents' attendance has on outcomes. The current study suggests that the inclusion of a parent would further enhance taha whānau and taha hinengaro, relative to children attending alone.

A measure of mindfulness, such as the Mindful Attention Awareness Scale modified for Children (MAAS-C), could be a useful addition to a future replication study. This could

explore whether mindfulness itself is a mechanism behind improvements in wellbeing. A meta-analysis of mindfulness-based interventions for youth with mental health problems concluded that there is insufficient evidence to claim that mindfulness itself is the mechanism behind improvements; only one study in their analysis found a correlation between improved mindfulness and decreased anxiety symptoms. The MAAS-C has been used in previous studies with PBS, which found a positive correlation between MAAS-C and SCWBS (Stirling Children's Wellbeing Scale; Devcich et al., 2017; Bernay et al., 2016). A decision was made to not include the MAAS-C in the current study. This was partially to avoid overwhelming participants with questionnaires, and also due to an unpublished pilot investigation, undertaken by one of the researchers of the current study that found a paradoxical effect at play when this measure was used; children tended to exhibit worse scores on the measure at post-treatment. Consideration of this trend indicated that children were more aware of what mindfulness is after the course, realised they had rated their mindfulness skills too favourably at baseline, and scored themselves more realistically – and often less favourably – at post-treatment. A solution to this problem may be to administer the MAAS-C after one or two sessions of the course, when children have been somewhat orientated to concepts of mindfulness.

Follow up of participants in the current study would provide important additional data to the research. Re-administering questionnaires and conducting follow-up interviews would reveal whether participants have retained the reported improvements, and whether they are continuing to implement PBS skills in everyday life. The follow up could be conducted within a few years of course completion and would indicate whether booster sessions of PBS may be a useful addition to the programme.

Finally, further validation of the two psychological questionnaires created for the current study — the Pause Breathe Smile Anxiety Questionnaire and the Pause Breathe Smile

Relationship Questionnaire — would be beneficial, especially if they were to be used in replication studies.

Conclusion

The current study aligns with previous research on PBS, which demonstrate its benefits on taha hinengaro, taha tinana, taha wairua, and taha whānau. The current study provides support for the use of PBS as a targeted treatment for children with clinical anxiety. Results suggest it is an effective means of treating multiple children at once. The group format has potential to minimise cost and reduce waiting times for children needing treatment. As reported by participants, the group therapy environment was enjoyable for many children. Statements from participants indicate the group format helped to normalise mental health challenges and the process of receiving support. Furthermore, the current study adds to the growing body of research that supports the implementation of PBS as a school-based intervention in Aotearoa New Zealand. Implementation of PBS in the current study, however, differs from its usual form as a school-based treatment; children attended with a parent, within a small group of children with similar difficulties. When considering what was responsible for improvements for the child participants, the influence of the parent-child team and the mindfulness skills themselves cannot be separated. However, thematic analysis of post-course interview data indicated children were using and benefiting from many of the course skills, seemingly without the influence of their parent. Informed by previous studies of PBS, in which children attend the course without a parent, it is reasonable to conclude that the children in the current study would have benefited from the course had they attended alone. However, the lack of a control group does not allow this conclusion to be drawn. Overall, the current study provides evidence that PBS is an effective intervention for children with anxiety. This is a valuable finding, considering the rising prevalence of anxiety in youth and demand for treatment (Ministry of Health, 2018; de Miranda et al., 2020).

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Appendix A

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 369 4588, Extn 94588
Email: human-ethics@canterbury.ac.nz

Ref: 2019/45/ERHEC Amendment 2

24 September 2019

Georgina Davis
Psychology
UNIVERSITY OF CANTERBURY

Dear Georgina

Thank you for your request for an amendment to your research proposal "Investigating the Benefits of "Pause Breathe Smile" on Child Wellbeing and Family Relationships" as outlined in your email dated 14th September 2019. I am pleased to advise that this amendment has been considered and approved by the Educational Research Human Ethics Committee.

Please note that should circumstances relevant to this current application change you are required to reapply for ethical approval.

If you have any questions regarding this approval, please advise.

We wish you well for your continuing research.

Yours sincerely

pp R. Robinson

Dr Patrick Shepherd
Chair
Educational Research Human Ethics Committee

Please note that ethical approval relates only to the ethical elements of the relationship between the researcher, research participants and other stakeholders. The granting of approval by the Educational Research Human Ethics Committee should not be interpreted as comment on the methodology, legality, value or any other matters relating to this research.

F E S

Appendix B

Georgina Davis
Psychology Department
Telephone: +64 3 369 4999 ex. 3400
Email: georgina.davis@pg.canterbury.ac.nz
19th June 2019
HEC Ref: 2019/45/ERHEC

Investigating the Benefits of "Pause Breathe Smile" on Child Wellbeing and Family Relationships
Information Sheet for Participants

My name is Georgina Davis and I am completing a Masters of Science at the University of Canterbury, with supervision from Ann Huggett and Dr. Virginia McIntosh. We are working together to investigate the benefits of the Pause Breathe Smile programme. Our study seeks to measure improvements in child anxiety symptoms and family relationships after participation in Pause Breathe Smile.

You have been approached to take part in this study because you are participating in the Pause Breathe Smile programme at The University of Canterbury.

If you choose to take part in this study, you will be consenting to your own and your child's completed questionnaires and interview content from Pause Breathe Smile being included in an evaluation of the programme. Only the interview conducted at the end of the programme will be used as data in our study. Your responses to the questionnaires and interview questions will remain strictly confidential. You will have the opportunity to review your interview transcript at the end of your interview. Participating in the study does not require any additional time from you.

Participation is voluntary and you have the right to withdraw at any stage without penalty. You may ask for your raw data to be withdrawn from the study. If you withdraw, I will remove information relating to you. However, once analysis of raw data starts on 13th April 2020, it will become increasingly difficult to remove the influence of your data on the results.

Results of the project may be published, but you may be assured of complete confidentiality of data gathered in this investigation: your identity will not be made public. To ensure confidentiality, the questionnaires you complete and your interview transcript will be "de-identified". This means you will be assigned an ID number that will be recorded on your questionnaires and interview transcript instead of your name. Ann Huggett, your therapist for Pause Breathe Smile, and I are the only people who will know who each questionnaire and interview transcript belongs to. Your information will be stored securely in the University of Canterbury's Psychology Centre, and your identifying data will be stored separately from your completed questionnaires and interview transcripts. Only the research group will have access to your data and it will be stored securely on the University of Canterbury's server. The study will be part of my Masters thesis, which is a public document and will be available through the UC Library. We also plan to publish the study as a journal article. In both these documents, your identity will remain private.

Please indicate to the researcher on the consent form if you would like to receive a copy of the

summary of results of the project.

The project is being carried out as part of a Master of Science by Georgina Davis under the supervision of Dr Virginia McIntosh and Ann Huggett, who can be contacted at gini.mcintosh@canterbury.ac.nz and ann.huggett@canterbury.ac.nz. They will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Educational Research Human Ethics Committee, and participants should address any complaints to The Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to participate in the study, you are asked to complete the consent form and return to Ann Huggett.

Psychology Department
Telephone: +64 3 369 4999 ex. 3400
Email: georgina.davis@pg.canterbury.ac.nz

Investigating the Benefits of "Pause Breathe Smile" on Child Wellbeing and Family Relationships
Consent Form for Participants

- ☐ I have been given a full explanation of this project and have had the opportunity to ask questions.
- ☐ I understand what is required of me if I agree to take part in the research.
- ☐ I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.
- ☐ I understand that any information or opinions I provide will be kept confidential to the researcher and her supervisors and that any published or reported results will not identify the participants. I understand that a thesis is a public document and will be available through the UC Library.
- ☐ I understand that all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after ten years.
- ☐ I understand that I can contact the researcher Georgina Davis (georgina.davis@pg.canterbury.ac.nz) or supervisor Dr. Virginia McIntosh (virginia.mcintosh@canterbury.ac.nz) for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)
- ☐ I would like a summary of the results of the project.
- ☐ By signing below, I agree to participate in this research project.

Name:_____ Signed:_____ Date:_____

Email address *(for report of findings, if applicable)*:_____

Please return this form to Ann Huggett.

Appendix C

PAUSE BREATHE SMILE

Ann wants to know how people feel before and after the Pause Breathe Smile programme. She has explained her research to me.

○ I am happy to be part of the project, so I have circled the YES

OR

○ I don't want to be part of the project, so I have circled the NO

YES NO

My name:

_____

Please give this back to Ann now.

Date:

Appendix D

Screen for Child Anxiety Related Disorders (SCARED) – Parent Version

Screen for Child Anxiety Related Disorders (SCARED)

PARENT Version—Page 1 of 2 (to be filled out by the PARENT)

Developed by Boris Birmaher, M.D., Suneeta Khetarpal, M.D., Marlane Cully, M.Ed., David Brent, M.D., and Sandra McKenzie, Ph.D.,
Western Psychiatric Institute and Clinic, University of Pittsburgh *(October, 1995). E-mail:* birmaherb@upmc.edu

See: Birmaher, B., Brent, D. A., Chiappetta, L., Bridge, J., Monga, S., & Baugher, M. (1999). Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED): a replication study. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*(10), 1230–6.

Name: _____ Date: _____

Directions:
Below is a list of sentences that describe how people feel. Read each phrase and decide if it is "Not True or Hardly Ever True" or "Somewhat True or Sometimes True" or "Very True or Often True" for your child. Then, for each statement, fill in one circle that corresponds to the response that seems to describe your child *for the last 3 months*. Please respond to all statements as well as you can, even if some do not seem to concern your child.

	0 Not True or Hardly Ever True	1 Somewhat True or Sometimes True	2 Very True or Often True	
1. When my child feels frightened, it is hard for him/her to breathe	O	O	O	PN
2. My child gets headaches when he/she am at school.	O	O	O	SH
3. My child doesn't like to be with people he/she does't know well.	O	O	O	SC
4. My child gets scared if he/she sleeps away from home.	O	O	O	SP
5. My child worries about other people liking him/her.	O	O	O	GD
6. When my child gets frightened, he/she fells like passing out.	O	O	O	PN
7. My child is nervous.	O	O	O	GD
8. My child follows me wherever I go.	O	O	O	SP
9. People tell me that my child looks nervous.	O	O	O	PN
10. My child feels nervous with people he/she doesn't know well.	O	O	O	SC
11. My child gets stomachaches at school.	O	O	O	SH
12. When my child gets frightened, he/she feels like he/she is going crazy.	O	O	O	PN
13. My child worries about sleeping alone.	O	O	O	SP
14. My child worries about being as good as other kids.	O	O	O	GD
15. When my child gets frightened, he/she feels like things are not real.	O	O	O	PN
16. My child has nightmares about something bad happening to his/her parents.	O	O	O	SP
17. My child worries about going to school.	O	O	O	SH
18. When my child gets frightened, his/her heart beats fast.	O	O	O	PN
19. He/she child gets shaky.	O	O	O	PN
20. My child has nightmares about something bad happening to him/her.	O	O	O	SP

Screen for Child Anxiety Related Disorders (SCARED)

PARENT Version—Page 2 of 2 (to be filled out by the PARENT)

	0 Not True or Hardly Ever True	1 Somewhat True or Sometimes True	2 Very True or Often True	
21. My child worries about things working out for him/her.	O	O	O	**GD**
22. When my child gets frightened, he/she sweats a lot.	O	O	O	**PN**
23. My child is a worrier.	O	O	O	**GD**
24. My child gets really frightened for no reason at all.	O	O	O	**PN**
25. My child is afraid to be alone in the house.	O	O	O	**SP**
26. It is hard for my child to talk with people he/she doesn't know well.	O	O	O	**SC**
27. When my child gets frightened, he/she feels like he/she is choking.	O	O	O	**PN**
28. People tell me that my child worries too much.	O	O	O	**GD**
29. My child doesn't like to be away from his/her family.	O	O	O	**SP**
30. My child is afraid of having anxiety (or panic) attacks.	O	O	O	**PN**
31. My child worries that something bad might happen to his/her parents.	O	O	O	**SP**
32. My child feels shy with people he/she doesn't know well.	O	O	O	**SC**
33. My child worries about what is going to happen in the future.	O	O	O	**GD**
34. When my child gets frightened, he/she feels like throwing up.	O	O	O	**PN**
35. My child worries about how well he/she does things.	O	O	O	**GD**
36. My child is scared to go to school.	O	O	O	**SH**
37. My child worries about things that have already happened.	O	O	O	**GD**
38. When my child gets frightened, he/she feels dizzy.	O	O	O	**PN**
39. My child feels nervous when he/she is with other children or adults and he/she has to do something while they watch him/her (for example: read aloud, speak, play a game, play a sport).	O	O	O	**SC**
40. My child feels nervous when he/she is going to parties, dances, or any place where there will be people that he/she doesn't know well.	O	O	O	**SC**
41. My child is shy.	O	O	O	**SC**

Appendix E

Screen for Child Anxiety Related Disorders (SCARED) – Child Version

Screen for Child Anxiety Related Disorders (SCARED)

CHILD Version—Page 1 of 2 (to be filled out by the CHILD)

Developed by Boris Birmaher, M.D., Suneeta Khetarpal, M.D., Marlane Cully, M.Ed., David Brent, M.D., and Sandra McKenzie, Ph.D., Western Psychiatric Institute and Clinic, University of Pittsburgh *(October, 1995). E-mail:* birmaherb@upmc.edu

See: Birmaher, B., Brent, D. A., Chiappetta, L., Bridge, J., Monga, S., & Baugher, M. (1999). Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED): a replication study. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*(10), 1230–6.

Name: _____ Date: _____

Directions:
Below is a list of sentences that describe how people feel. Read each phrase and decide if it is "Not True or Hardly Ever True" or "Somewhat True or Sometimes True" or "Very True or Often True" for you. Then, for each sentence, fill in one circle that corresponds to the response that seems to describe you *for the last 3 months*.

	0 Not True or Hardly Ever True	1 Somewhat True or Sometimes True	2 Very True or Often True	
1. When I feel frightened, it is hard to breathe	O	O	O	PN
2. I get headaches when I am at school.	O	O	O	SH
3. I don't like to be with people I don't know well.	O	O	O	SC
4. I get scared if I sleep away from home.	O	O	O	SP
5. I worry about other people liking me.	O	O	O	GD
6. When I get frightened, I feel like passing out.	O	O	O	PN
7. I am nervous.	O	O	O	GD
8. I follow my mother or father wherever they go.	O	O	O	SP
9. People tell me that I look nervous.	O	O	O	PN
10. I feel nervous with people I don't know well.	O	O	O	SC
11. I get stomachaches at school.	O	O	O	SH
12. When I get frightened, I feel like I am going crazy.	O	O	O	PN
13. I worry about sleeping alone.	O	O	O	SP
14. I worry about being as good as other kids.	O	O	O	GD
15. When I get frightened, I feel like things are not real.	O	O	O	PN
16. I have nightmares about something bad happening to my parents.	O	O	O	SP
17. I worry about going to school.	O	O	O	SH
18. When I get frightened, my heart beats fast.	O	O	O	PN
19. I get shaky.	O	O	O	PN
20. I have nightmares about something bad happening to me.	O	O	O	SP

Screen for Child Anxiety Related Disorders (SCARED)

CHILD Version—Page 2 of 2 (to be filled out by the CHILD)

	0 Not True or Hardly Ever True	1 Somewhat True or Sometimes True	2 Very True or Often True	
21. I worry about things working out for me.	O	O	O	GD
22. When I get frightened, I sweat a lot.	O	O	O	PN
23. I am a worrier.	O	O	O	GD
24. I get really frightened for no reason at all.	O	O	O	PN
25. I am afraid to be alone in the house.	O	O	O	SP
26. It is hard for me to talk with people I don't know well.	O	O	O	SC
27. When I get frightened, I feel like I am choking.	O	O	O	PN
28. People tell me that I worry too much.	O	O	O	GD
29. I don't like to be away from my family.	O	O	O	SP
30. I am afraid of having anxiety (or panic) attacks.	O	O	O	PN
31. I worry that something bad might happen to my parents.	O	O	O	SP
32. I feel shy with people I don't know well.	O	O	O	SC
33. I worry about what is going to happen in the future.	O	O	O	GD
34. When I get frightened, I feel like throwing up.	O	O	O	PN
35. I worry about how well I do things.	O	O	O	GD
36. I am scared to go to school.	O	O	O	SH
37. I worry about things that have already happened.	O	O	O	GD
38. When I get frightened, I feel dizzy.	O	O	O	PN
39. I feel nervous when I am with other children or adults and I have to do something while they watch me (for example: read aloud, speak, play a game, play a sport).	O	O	O	SC
40. I feel nervous when I am going to parties, dances, or any place where there will be people that I don't know well.	O	O	O	SC
41. I am shy.	O	O	O	SC

Appendix F

Pause Breathe Smile Anxiety Questionnaire – Parent Version

My child feels anxious or worried

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

Worry or anxiety stops my child doing things

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

My child can calm his/herself down when worried or anxious

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

My child is confident in his/herself

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

My child has difficulty getting to sleep

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

There are things that worry or scare my child

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

My child focuses on their worrying thoughts or feelings

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

My child seems to try and push worrying thoughts out of their mind

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

My child wakes in the night and has trouble getting back to sleep

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

My child uses breathing to calm down

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

My child can cope with difficult feelings

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

Appendix G

Pause Breathe Smile Anxiety Questionnaire – Child Version

I feel anxious or worried

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

Being worried or anxious stops me from doing things

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

I can calm myself down when I feel worried or anxious

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

I feel confident in myself

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

I have difficulty getting to sleep

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

There are things that worry or scare me

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

I focus on my worrying thoughts and feelings

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

I try to push worrying thoughts away or out of my head

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

I wake up in the night and it is hard to get back to sleep

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

I use breathing to calm down

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

I can cope with difficult feelings

1	2	3	4	5
Never	Occasionally	Sometimes	Often	Always

I worry or feel anxious about .....

_____

The times I worry or feel anxious the most are .....

_____

When I am worried or anxious I ....

_____

Appendix H

Pause Breathe Smile Relationship Questionnaire – Parent Version

Answer the following questions to show how often you have thought the following in the past two weeks. Please circle your answers.

My child feels that I listen to him/her.	All the time	Most of the time	About half the time	Sometimes	Not at all
I feel connected to my child.	All the time	Most of the time	About half the time	Sometimes	Not at all
My child feels understood by me.	All the time	Most of the time	About half the time	Sometimes	Not at all
I enjoy spending time with my child.	All the time	Most of the time	About half the time	Sometimes	Not at all
I can help my child cope with difficult things.	All the time	Most of the time	About half the time	Sometimes	Not at all
I help my child practise Pause Breathe Smile.	All the time	Most of the time	About half the time	Sometimes	Not at all
My child gets along with people in our household.	All the time	Most of the time	About half the time	Sometimes	Not at all
There are arguments in our household.	All the time	Most of the time	About half the time	Sometimes	Not at all
I am interested in my activities.	All the time	Most of the time	About half the time	Sometimes	Not at all
My child can talk to me when he/she worried or anxious.	All the time	Most of the time	About half the time	Sometimes	Not at all
My child feels that I am calm and helpful.	All the time	Most of the time	About half the time	Sometimes	Not at all
I cope well with stress.	All the time	Most of the time	About half the time	Sometimes	Not at all

Appendix I

Pause Breathe Smile Relationship Questionnaire – Child Version

Answer the following questions to show how often you have thought the following in the past two weeks. Please circle your answers.

Mum/Dad listens to me.	All the time	Most of the time	About half the time	Sometimes	Not at all
I feel connected to Mum/Dad.	All the time	Most of the time	About half the time	Sometimes	Not at all
Mum/Dad understands me.	All the time	Most of the time	About half the time	Sometimes	Not at all
I enjoy spending time with Mum/Dad.	All the time	Most of the time	About half the time	Sometimes	Not at all
Mum/Dad helps me cope with difficult things.	All the time	Most of the time	About half the time	Sometimes	Not at all
Mum/Dad helps me practise Pause Breathe Smile	All the time	Most of the time	About half the time	Sometimes	Not at all
I get along with people in my household.	All the time	Most of the time	About half the time	Sometimes	Not at all
There are arguments in my household.	All the time	Most of the time	About half the time	Sometimes	Not at all
Mum/Dad is interested in my activities.	All the time	Most of the time	About half the time	Sometimes	Not at all
I can talk with Mum/Dad when I am worried or anxious.	All the time	Most of the time	About half the time	Sometimes	Not at all
Mum/Dad is calm and helpful.	All the time	Most of the time	About half the time	Sometimes	Not at all
Mum/Dad copes well with stress.	All the time	Most of the time	About half the time	Sometimes	Not at all